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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/526,066

02/28/2005

Antonino Fratta

Q86455

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06/13/2006

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EXAMINER

NGUYEN, TRAN N

ART UNIT

PAPER NUMBER

2834

DATE MAILED: 06/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/526,066

Applicant(s)

FRATTA, ANTONINO

Examiner

Tran N. Nguyen

Art Unit

2834

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 6-11 and 15-26 is/are rejected.
- 7) ☒ Claim(s) 4, 5 and 12-14 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 February 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date ____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: ____.

Claim Rejections - 35 USC § 112

1. Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1, the recitation “*each of the said ferromagnetic tooth structures of the armature having at the air gap a sequence of teeth (20a) of substantially constant extent along the said direction of relative displacement, separated by at least one pseudoslot (21a)*” is indefinite because the armature (A) is recited to have a number of pairs of poles only, while the **inductor (B) having “n” teeth (20) with “n” slot (21) and pseudoslot (21a)** as shown in figs 1a-3d, 6c, 7, 8a-8e, 9f, 11.

In light of the spec., the above recitation is understood as “*each of the said ferromagnetic tooth structures of the inductor (B) having at the air gap a sequence of teeth (20a) of substantially constant extent along the said direction of relative displacement, separated by at least one pseudoslot (21a)*”.

Double Patenting

The non-statutory double patenting rejection, whether of the obviousness-type or non-obviousness-type, is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent. *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); and *In re Goodman*, 29 USPQ2d 2010 (Fed. Cir. 1993).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(b) and © may be used to overcome an actual or provisional rejection based on a non-statutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.78(d).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-3, 6-11, 15-26 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over **claims 1-35 of U.S. Patent 7038345** (hereafter, USP '345) in view of **Nashiki (US 5801478)**.

Claims 1-3, 6-11, 15-26 of USP'345 are similar to claims 1-35 of this application. The only differences are as the following recitation in the claimed invention:

(a) inductor (B) having at the air gap a sequence of teeth (20a) of substantially constant extent along the said direction of relative displacement, separated by at least one pseudoslot (21a), wherein the tooth may have one or two pseudoslots;

(b) the teeth of the inductor (B) have, at the surface facing the air gap (G), an extent which, along the said direction of relative displacements, has a magnitude close to $3/4$ or $7/8$ of the tooth pitch;

(c) as recited in claims 22-26, respectively the parameter of the poles are $n=3$ and $N=9$, or $n=4$ and $N=12$, or $n=6$ and $N=12$, or $n=6$ and $N=18$, or $n=12$ and $N=24$.

Regarding the limitations of the subsection (a) herein, Nashiki (US 5801478) (as shown in FIG. 19 is an enlarged view showing the stator teeth, each having a tip of a tooth is divided into portions (36) defining pseudoslots thereof. Nashiki teaches that the configuration of the tooth with pseudoslots would reduce a difference of magnetic reluctance between the slots and the stator core and between the tips of the slots and the surface of the rotor to minimize local torque ripples of the motor such as throttle ripples.

Thus, it would have been obvious to one skilled in the art at the time the invention was made to modify the inductor (B) (i.e., the stator) teeth by configuring the tip of each tooth with divided portions defining pseudoslots, as taught by Nashiki. Doing so would reduce a difference of magnetic reluctance between the slots and the stator core and between the tips of the slots and the surface of the rotor to minimize local torque ripples, resulting in improving the efficient

Art Unit: 2834

performance of the machine. Furthermore, stator having pole's tip being configured with psuedoslot are well known in the art (see cited refs for evidence).

Regarding the limitations of the subsections (b)-(c) herein, those skilled in the art would realize that the size/shape of the stator teeth as well as "n" numbers of stator teeth are a factor depends on the structure of the rotor and the overall size of the machine, while "N" is an integer multiple of "n"; therefore, an artisan would have the necessary skills in the art to determined the optimum range of the number of "n" teeth and/or the teeth have, at the surface facing the air gap (G), an extent which, along the said direction of relative displacements, has a magnitude close to $3/4$ or $7/8$ of the tooth pitch for the purpose of ensuring proper structural configuration of the machine as well as enhancing the efficiency performance thereof.

Thus, it would have been obvious to one skilled in the art at the time the invention was made to modify the induction so that the teeth of the inductor (B) have, at the surface facing the air gap (G), an extent which, along the said direction of relative displacements, has a magnitude close to $3/4$ or $7/8$ of the tooth pitch; or, respectively the parameter of the poles are $n=3$ and $N=9$, or $n=4$ and $N=12$, or $n=6$ and $N=12$, or $n=6$ and $N=18$, or $n=12$ and $N=24$. Doing so would enhance the efficiency performance of the machine. Furthermore, it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

Allowable Subject Matter

Claims 4-5, 12-14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

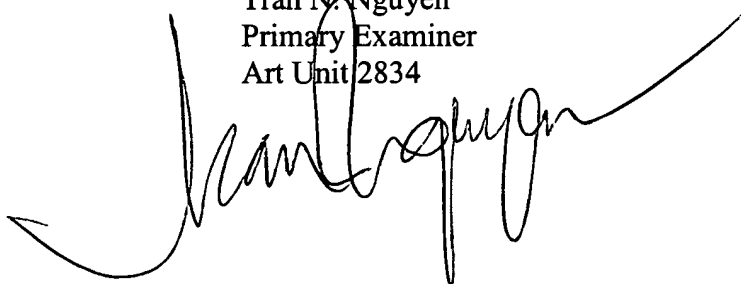
Art Unit: 2834

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tran N. Nguyen whose telephone number is (571) 272-2030. The examiner can normally be reached on M-T 6:00AM- 3:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Darren Schuberg can be reached on (571)-272-2044. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Tran N. Nguyen
Primary Examiner
Art Unit 2834

A handwritten signature in black ink, appearing to read 'Tran N. Nguyen', is written over the printed name and title.